

## PERSONAL INFORMATION

Simone Testa



Sex | Date of birth 12/07/1994 | Nationality

## EDUCATION AND TRAINING

Nov 2019 – in progress

**PhD student, Bioengineering and Robotics**

Department of Computer Science, Bioengineering, Robotics and Systems Engineering (DIBRIS), University of Genoa, Genoa (Italy)

- Research Field: Deep learning techniques for neuromorphic computing systems with an event-based active-vision setup. Advisor: Silvio Paolo Sabatini.
- Teaching Assistance: Development of a set of Jupyter notebooks as interactive exercises for the master course “Neuromorphic Computing and Integrative Cognitive Systems”, DIBRIS.

Feb 2016 – Oct 2019

**Master’s degree, Bioengineering (Neuroengineering and Bio-ICT)  
110 /110 cum laude**

Department of Computer Science, Bioengineering, Robotics and Systems Engineering (DIBRIS), University of Genoa, Genoa (Italy)

- Final Thesis: “An Active Vision System Based on Neuromorphic Technology” is the result of original scientific activity conducted over six months (January - June 2019) at the “Institute of Neuroinformatics”, ETH and UZH Zurich. Advisors: Silvio Paolo Sabatini, Giacomo Indiveri (ETH).
- Awards: In June 2018 I earned a merit-based scholarship for conducting a thesis project abroad, under the “Fondo Giovani” Programme funded by MIUR.
- Main Subjects: Machine Learning, Computational Neuroscience, Neurotechnologies, Perceptual Systems, Computer Vision.

Sep 2013 – Nov 2016

**Bachelor’s degree, Clinical Engineering  
108 /110**

Department of Basic and Applied Sciences for Engineering (SBAI), University of Rome “La Sapienza”, Rome (Italy)

- Final Thesis: “Physical Basis of Artifactual Images in Thoracic Ultrasonography”, in collaboration with “Fondazione Toscana Gabriele Monasterio”, Pisa. Advisors: Andrea Bettucci, Marcello Demi (FTGM).
- Main Subjects: Electronics, Biomedical Instrumentation, Mathematical Methods, Calculus, Physics.

Sep 2008 – Jun 2013

**Classical diploma, Bilingual Section  
88 /100**

“Ugo Foscolo” high school, Albano Laziale, Rome (Italy)

- Related Activity: student-body president from October 2012 to October 2013.

## PERSONAL SKILLS

Mother tongue

Italian

Other languages	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C2	C1	C1	C2
Kindergarten and elementary education at the “Castelli International School” in Grottaferrata, Rome (Italy)					
French	B1	B1	B1	B1	B2

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

- Computer skills**
- Programming: Python, MatLab, C, C++.
  - ML/CV Toolboxes: Open-CV, Scikit-Image, Scikit-Learn, PyTorch, TensorFlow.
  - Document Preparation Systems: LaTeX.
  - Source Code Management: Git.
  - OS: Linux Ubuntu, MS Windows, macOS.
  - MS Office Tools and Open Office Suite.

**Driving licence** B

- Communication skills**
- Excellent communication skills gained from classical studies at high school.
  - Emotional intelligence and ability in building and managing long-term relationships.

- Organisational / managerial skills**
- Excellent organizational and leading skills: aptitude for planning and problem solving developed during high school experiences as student body president and for co-advising thesis projects and leading team works at university.
  - Solution-oriented, methodical, data-driven and synthetic mind set, typical of an engineering education.
  - Strong aptitude for team working and motivation, due to team sports practiced, flat sharing and working in research groups.
  - Optimism, flexibility and sense of duty are my strengths.

ADDITIONAL INFORMATION

- Publications**
- Testa S., Indiveri G. and Sabatini S.P., “A Bio-inspired Active Vision System Based on Fixational Eye Movements”, in proceedings of the 2020 IEEE International Symposium on Circuits and Systems (ISCAS 2020).
  - Testa S., Indiveri G. and Sabatini S.P., “Dynamic Detectors of Oriented Spatial Contrast”, in proceedings of the 15<sup>th</sup> International Conference on Computer Vision Theory and Applications (VISAPP 2020).
  - Peveri F., Testa S., Sabatini S.P., “A Cortically-Inspired Architecture for Event-Based Visual Motion Processing: from Design Principles to Real-World Applications”, in proceedings of the 2021 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) workshops.

- Public Speeches**
- Poster presentation at the 15<sup>th</sup> International Conference on Computer Vision Theory and Applications (VISAPP 2020), February 2020, Valletta (Malta).
  - Oral presentation at the 2020 IEEE International Symposium on Circuits and Systems (ISCAS 2020), October 2020, Online Event on Zoom.

### Projects

- Co-advisor of a master thesis project for optic flow estimation through a spiking convolutional neural network processing the event-based output of a neuromorphic camera.
- Development of a custom Python repository for handling simultaneous control of a pan-tilt unit device and an event-based sensor through multiprocessing techniques.
- Deep learning implementation for playing the "Rock-Paper-Scissors" game by recognizing the hand posture through a convolutional neural network.
- Teamwork program design for the individuation of brain microstates in EEG signals using k-means clustering algorithm, achieving interesting results.
- Teamwork development of a practical android app for the assessment of user's vision capability with state-of-the-art psychophysics methods.
- Development of a program for the prediction of prey and predators' evolution, given initial conditions, thanks to non-linear differential equations of the Lotka-Volterra model.

### Certificates

- "Machine Learning with Python" from the IBM AI Engineering Professional Certificate, *Coursera MOOC Platform*.
- "Deep Neural Networks with PyTorch" from the IBM AI Engineering Professional Certificate, *Coursera MOOC Platform*.
- "Building Deep Learning Models with TensorFlow" from the IBM AI Engineering Professional Certificate, *Coursera MOOC Platform*.
- "Regularization Methods for Machine Learning" from the Machine Learning Genoa Center (MaLGa), *UniGe Polytechnic School*.
- "Computer Vision Crash Course" from the Machine Learning Genoa Center (MaLGa), *UniGe Polytechnic School*.

### Sports and activities

- Team sports: volleyball, football, sailing and orienteering.
- Individual sports: climbing, breakdancing and skiing.
- Strong passion for travel.

*In compliance with the Italian Legislative Decree no. 196 dated 30/06/2003, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the fore-mentioned decree.*